

## REMARKS

Upon entry of the present amendment, claims 1, 27-29, and 31-33 are pending in the instant application. Claims 1, 27-29 and 31-33 have been amended. Support for the claim amendments presented herein is found throughout the specification and in the claims as originally filed. For example, support for the amendments to claim 1 is found at least in the paragraph bridging pages 9-10, in the paragraphs on page 49; in the paragraph bridging pages 69-70 and in Figure 1A of the as-filed application. Claims 27-29 and 31-33 have been amended solely to maintain antecedent basis throughout the amended claim set. Accordingly, no new matter has been added the amendments presented herein.

### **Claim Rejections Under 35 U.S.C. §112, First Paragraph**

Claims 1, 27-29 and 31-33 remain rejected under 35 U.S.C. §112, first paragraph as lacking written description and enablement.

Applicants traverse this rejection. Claim 1 has been amended to recite a method of inhibiting osteoclast-mediated bone resorption in a bone cell, comprising inhibiting an activity of a gene product encoded by osteoclast associated gene OC14 comprising the nucleotide sequence of SEQ ID NO: 50 by administering an antibody that decreases the activity of the gene product by at least 10% in the presence of the antibody, as compared to the activity of the gene product in the absence of the antibody.

Applicants submit that the methods recited by the amended claims are described in such a way as to demonstrate that the patentee was in possession of the invention at the time the instant application was filed. The claimed invention is based on the discovery by the inventors that the expression of the osteoclast-associated gene OC14 is up-regulated during RANKL-induced osteoclastogenesis. The inventors were the first to identify that osteoclast-mediated bone resorption can be inhibited by decreasing the expression of a gene product encoded by the osteoclast-related gene OC14.

The subject-matter of the pending claims as amended is literally described in the specification, *e.g.*, at pages 1-2, at page 49 and in the first paragraph at page 58. Moreover, the specification discloses that decreasing the expression of a gene product encoded by the osteoclast-related gene OC14 will inhibit osteoclast-mediated bone resorption. The specification also teaches the inhibition of the gene product encoded by OC14 using an antibody.

Accordingly, Applicants submit that the subject matter of the amended claims is described in the specification as originally filed in such a way as to demonstrate that Applicants had possession of the claimed invention at the time the instant application was filed.

Furthermore, the specification teaches one how to modulate osteoclast-mediated bone resorption and provides the necessary information to allow the skilled artisan to do so, namely, by targeting and inhibiting the activity of the OC14 gene product using an antibody. Accordingly, the teachings in the specification as originally filed provide sufficient guidance for the skilled artisan to practice the claimed methods without undue experimentation.

Applicants submit, therefore, that the amended claims satisfy all requirements of the first paragraph of 35 U.S.C. §112. As such, withdrawal of these rejections is requested.

## CONCLUSION

On the basis of the foregoing amendment and remarks, Applicants respectfully submit, that the pending claims are in condition for allowance. If there are any questions regarding this amendment and/or these remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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